



## QUARTERLY PROGRESS REPORT FOR THE PERIOD [REDACTED]

PROJECT TITLE: CounterBW Point Detectors DOE/HQ PMIS)

DOE/HQ PROJECT NUMBER: CB04LL

LAB/CONTRACTOR: LLNL

B&amp;R CODE: GC0404

DATE: [REDACTED]

PRINCIPAL INVESTIGATOR(S): Dr. R. Mariella Jr., LLNL, 925-422-8905

HQ PROJECT MANAGER: (Page Stoutland, NN- 1, (202) 586-3263)

## PROGRESS DURING THIS QUARTER:

We have performed initial evaluations of the hybrid aerosol collector from Research International, Inc., that combines the latest version of their wetted-wall cyclone collector with the LLNL-designed virtual impactor. We are working with RI, Inc., to optimize the tubulation that connects the two sections. We have begun collecting environmental background samples as challenge materials for our assays. (Task 1.1.1) We have received the PCR primers for Yp and have successfully tested it against a non-pathogenic strain of Yp. We are just starting the challenges of this assay against real-world samples collected by our aerosol collectors. (Task 1.3.2)

Using Bg samples collected in the wind tunnel at PNL we were able to detect this Bg using the assay on the Microcyte. (Tasks 1.1.2 and 1.3.1)

We have completed the software control and automated data processing for the Microcyte. (Task 1.1.2)

We have run the automated system with Bg specific antibodies, and have demonstrated detection of Bg injected as a liquid sample into the collector using the automated fluidic system. (Task 1.3.1)

We have continued our day-long testing of our autonomous pathogen detector, under single-computer control for the aerosol sampler, the fluidics, and the simple flow cytometer. We are also testing a new flow cytometry unit from Luminex that is capable of distinguishing 64 individually-coded latex beads for multiplex assays.

## COMMENTS:

We delayed integrating a Luminex flow cytometer into the Sentry (Task 1.4.2), because we encouraged to accelerate our plans to field test the Sentry at the PNL wind tunnel. We are reviewing the wind-tunnel/field-test plans, now.

## FUNDING STATUS:

	OPER\$	CAP \$
UNCOSTED FROM PREVIOUS FY:		
CURRENT FYFUNDING:		
TOTAL FUNDING AVAILABLE:	\$K	\$0K
\$ SPENT THIS QUARTER:	\$K	\$0K
\$ SPENT YEAR-TO-DATE:	\$K	\$0K



\$ REMAINING FORTRESS FY:

\$K

\$0K MAR 19 2002  
RECEIVED  
TC 1700

ANTICIPATED UNCOSTED  
CURRENT FY FUNDS:

\$K

\$0K

TECHNICAL REPORTS/PRESENTATIONS TO:

Langlois, R.G., Venkateswaran, K.S., and Mariella, R.P. [REDACTED] Rapid Identification of Microbial Agents Using Flow Cytometry. Immunochemistry Summit VII & Third Workshop on Biosensors and Biological Techniques in Environmental Analysis, Las Vegas, NV, [REDACTED]  
[REDACTED]

Langlois, R.G., Venkateswaran, K.S., Carlsen, T.M., Mariella Jr., R.P., and Milanovich, F.P. [REDACTED]. Development of Flow Cytometric Assays for the Identification and Characterization of Biological Agents. MASINT Biological Defense Symposium, Patrick Air Force Base, FL, [REDACTED]  
[REDACTED]

Mariella Jr., R., Miles, R., Bergman, W., Langlois, R., Venkateswaran, K.S., Jones, L., and Fuller, C. (1999). Autonomous Pathogen Detector/Identifier/Quantifier - the "Sentry". MASINT Biological Defense Symposium, Patrick Air Force Base, FL, [REDACTED]

Mariella Jr., R., "Instrumentation for Biomedical and Environmental Applications based on Microtechnology - Lessons Learned", SPIE Photonics West, [REDACTED]

Mariella Jr., R., "Over of MEMS at LLNL", Government Microtechnology and Applications Conference, Monterey, CA, [REDACTED]

Mariella Jr., R. presentation on the Autopnomous Pathogen Detector to Lt. Col. Jeff Stefaneck and Maj. LeAnn Brasure, AFTAC, visiting LLNL, [REDACTED]

Belgrader, P. [REDACTED] Ultrafast Bacterial Spore Disruption and Real-Time PCR Identification. MASINT Biological Defense Symposium, Patrick Air Force Base, FL, [REDACTED]

Mariella Jr., R. presentation on the Autopnomous Pathogen Detector to Lt. Col. Jeff Stefaneck and Maj. LeAnn Brasure, AFTAC, [REDACTED] at LLNL

Mariella Jr., R. presentation on the Autopnomous Pathogen Detector to Mr. Zarzycki, Technical Director at SBDCOM (formerly CBDCOM) and the Director of ERDEC, [REDACTED]

Mariella Jr., R. presentation on the Autopnomous Pathogen Detector to Bob Holcomb, Army Digitization Efforts, [REDACTED]